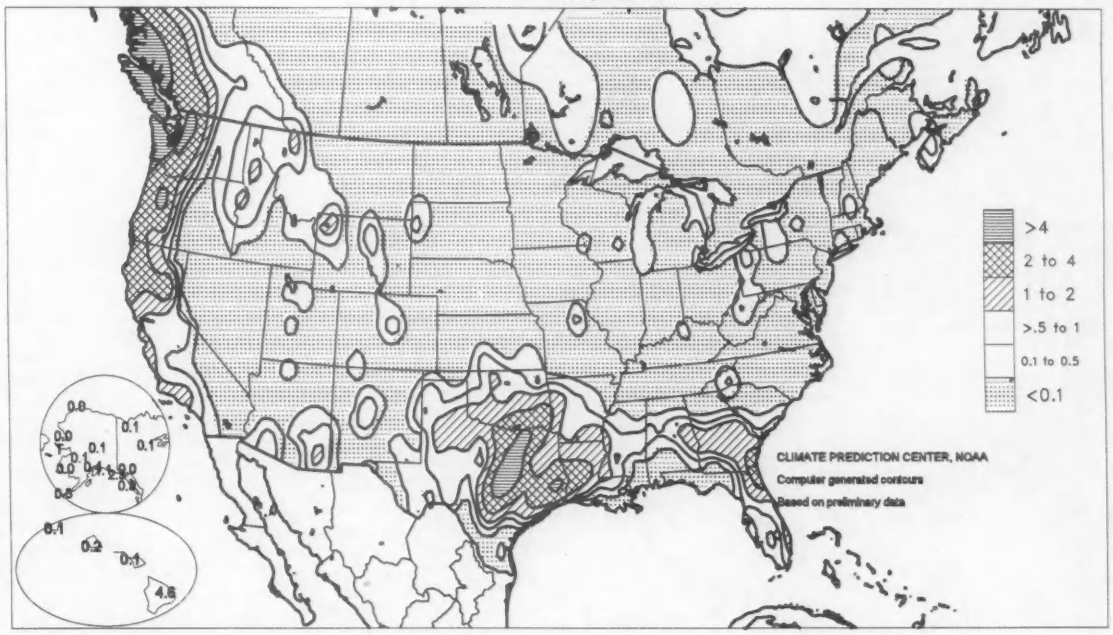
Volume 84, No. 51 *125 Years of Weather and Crop Reporting* December 23, 1997

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service
and World Agricultural Outlook Board

Total Precipitation (Inches)
DEC 14 - 20, 1997



HIGHLIGHTS

December 14 - 20, 1997

Unsettled weather persisted across the **Western and Southern States**, as storms continued to be steered by the southern branch of a split jet stream. In **Texas**, an early-week cold spell, including near-freezing temperatures in the **lower Rio Grande Valley**, yielded to late-week downpours in parts of the State. Farther east, early-week snowfall in parts of **Alabama** and **Mississippi** were replaced by late-week highs near 70°F. The northern branch of the split jet remained mostly north of the **United States**, promoting unusual warmth in the **North Central States** (8 to 24°F above normal). In contrast, weekly temperatures averaged as much as 6°F below normal in **Florida**.

(Continued on back cover)

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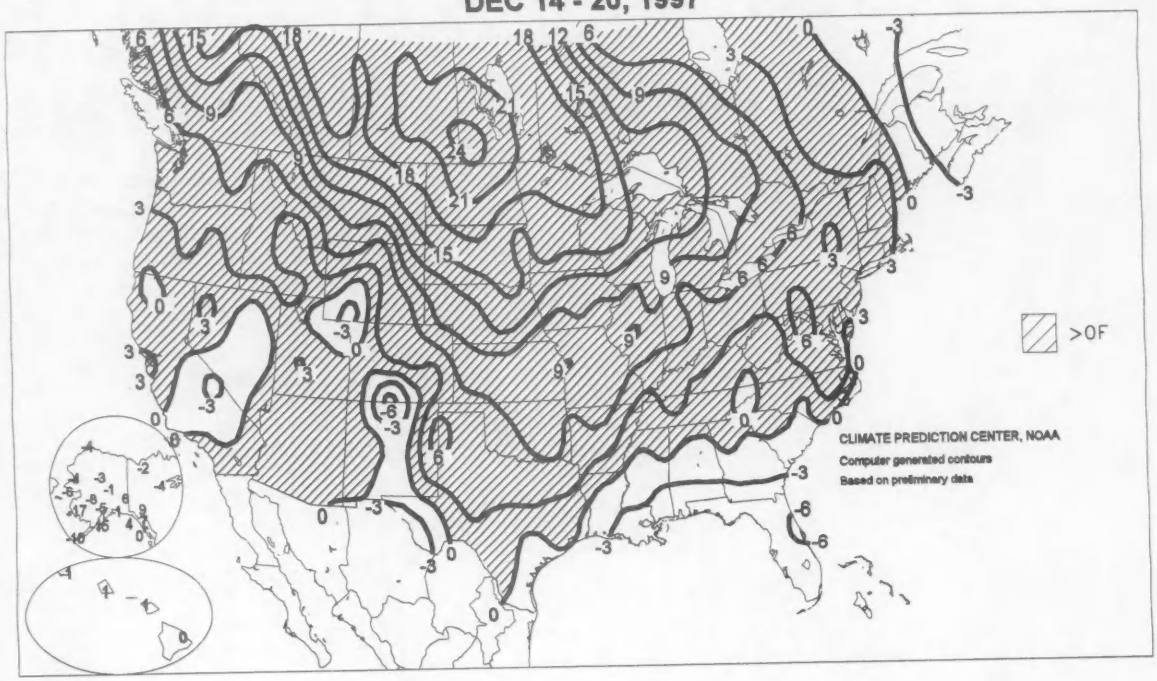
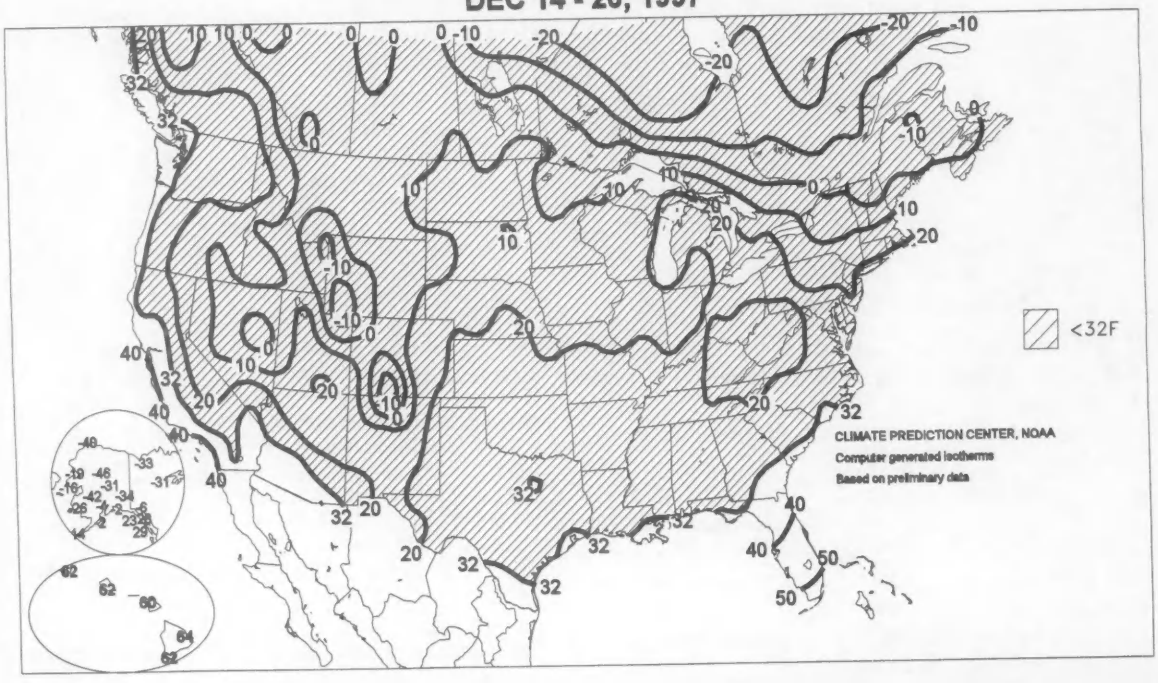
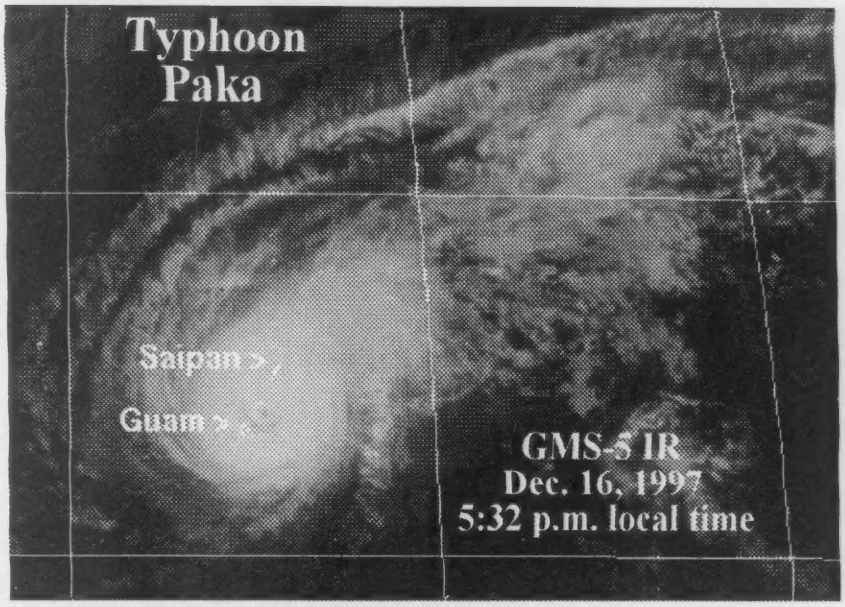
Departure of Average Temperature from Normal (°F)
DEC 14 - 20, 1997

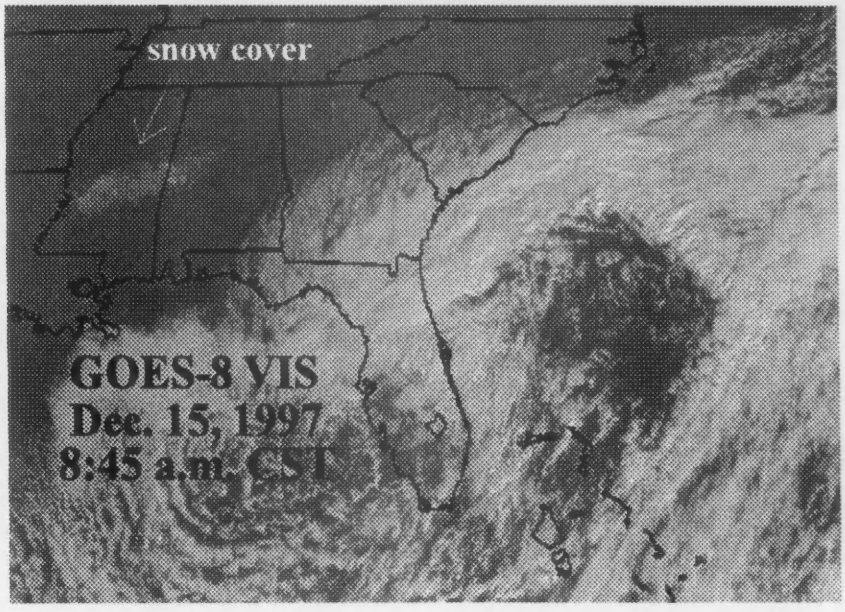


Extreme Minimum Temperature (°F)
DEC 14 - 20, 1997



Typhoon Paka, which formed over El Niño-warmed waters southwest of Hawaii on December 2, battered northern Guam (a U.S. territory and the southernmost of the Mariana Islands) on December 16 with estimated sustained winds of 140 mph and gusts to 165 mph. At 8:30 p.m. local time (10:30 GMT), Paka's eye passed within 13 miles of Andersen Air Force Base. Farther south, the National Weather Service office at Tiyan recorded 21.04 inches of rain on December 16-17 and a wind gust to 108 mph on Tuesday before the loss of instrumentation at 6:46 p.m. local time. After a brief weakening phase, Paka's estimated sustained winds peaked at 185 mph on December 18, but decreased rapidly thereafter. More than 19 days after the first advisory and 5 days after slamming Guam, Paka lost its tropical characteristics over the western Pacific. (Editor's note: A wind gust to 236 mph was recorded at Andersen Air Force Base during Paka's passage. The observation is in question, pending an evaluation of the recording equipment.)





A storm system, centered east of Jacksonville, FL, slowly departs the Southeast after dumping as much as 8 inches of snow on central Mississippi. The swath of snow is visible on the satellite image at left. The storm provided Jacksonville with their third daily-record rainfall of the month and raised the month-to-date total to a December-record 9.21 inches. The storm also added to monthly record totals in Tampa (9.05 inches) and Orlando (8.45 inches).

U.S. Crop Production Highlights

The following information was released by USDA's Agricultural Statistics Board on December 11, 1997. Forecasts refer to December 1.

All cotton production is forecast at 18.8 million bales, down 29,000 bales from November, and down 1 percent from 1996. This is the fourth largest crop on record. Yield is expected to average 672 pounds per acre, down 35 pounds from last year.

All oranges production for the 1997-98 season is forecast at a record-large 14.3 million tons, unchanged from the previous forecast in October but up 12 percent from the previous record of 12.8 million tons set in the 1996-97 season.

National Weather Data for Selected Cities

Weather Data for the Week Ending December 20, 1997

Data Provided by Climate Prediction Center (301-763-8000 EXT. 7511)

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
AL	BIRMINGHAM	59	30	70	22	45	0	-	-	-	-	-	-	-	94	42	0	5	-	-
	HUNTSVILLE	57	28	66	23	43	0	-	-	-	-	-	-	-	92	49	0	6	-	-
	MOBILE	61	36	71	28	49	-4	0.05	-1.16	0.02	2.62	77	78.39	126	96	52	0	2	4	0
	MONTGOMERY	60	31	69	26	46	-4	-	-	-	-	-	-	-	93	36	0	5	-	-
AK	ANCHORAGE	17	5	31	-4	11	-5	0.40	0.15	0.20	0.89	125	16.33	118	89	71	0	7	5	0
	BARROW	-10	-22	1	-40	-16	-4	0.00	-0.03	0.00	0.08	75	5.53	129	77	73	0	7	0	0
	FAIRBANKS	2	-18	24	-31	-8	-1	0.10	-0.09	0.04	1.85	336	7.37	69	84	70	0	7	4	0
	JUNEAU	37	32	39	28	34	7	-	-	-	-	-	-	-	97	77	0	4	-	-
	KODIAK	24	7	39	-2	15	-15	0.63	-0.92	0.50	3.08	72	60.21	93	86	55	0	7	3	1
	NOME	7	-6	20	-16	1	-6	0.01	-0.18	0.01	0.45	82	17.28	118	66	53	0	7	1	0
AZ	FLAGSTAFF	45	16	51	10	30	1	-	-	-	-	-	-	-	83	28	0	7	-	-
	PHOENIX	67	45	70	42	56	2	-	-	-	-	-	-	-	88	26	0	0	-	-
	PRESCOTT	53	25	55	21	39	3	0.06	-0.30	0.04	1.36	133	15.47	81	75	29	0	7	2	0
	TUCSON	67	39	74	36	53	1	-	-	-	-	-	-	-	62	20	0	0	-	-
	YUMA	68	46	69	41	57	2	0.00	-0.11	0.00	0.58	200	5.69	190	51	23	0	0	0	0
AR	FORT SMITH	59	32	68	27	46	6	0.64	-0.04	0.64	2.19	103	38.57	96	93	50	0	5	1	1
	LITTLE ROCK	60	34	67	27	47	5	0.05	-1.04	-	1.27	39	56.73	119	86	44	0	3	-	0
CA	BAKERSFIELD	51	40	59	34	46	-2	0.20	0.06	0.14	1.23	315	6.08	111	93	78	0	0	2	0
	EUREKA	55	41	61	31	48	0	2.90	1.55	1.80	4.69	119	37.00	104	86	70	0	1	5	2
	FRESNO	49	40	53	34	44	0	0.17	-0.14	0.15	1.13	128	8.02	80	96	76	0	0	3	0
	LOS ANGELES	66	49	72	48	58	1	0.02	-0.34	0.01	4.38	425	12.34	108	76	38	0	0	2	0
	REDDING	51	40	60	31	46	1	1.91	0.67	1.46	3.31	95	35.30	113	86	61	0	1	5	1
	SACRAM/MCCLELL	53	41	61	36	47	-	0.96	-	0.93	2.45	-	15.44	-	97	74	0	0	2	1
	SAN DIEGO	67	49	71	47	58	1	0.03	-0.33	0.03	0.91	89	6.28	67	73	37	0	0	1	0
	SAN FRANCISCO	57	48	60	42	52	2	1.13	0.44	0.93	5.27	279	21.74	118	91	65	0	0	4	1
CO	ALAMOSA	25	-9	29	-13	8	-9	0.00	-0.11	0.00	0.10	32	7.62	103	90	59	0	7	0	0
	CO SPRINGS	49	24	63	19	36	7	-	-	-	-	-	-	-	87	30	0	7	-	-
	DENVER	41	23	47	15	32	1	0.00	-0.14	0.00	0.45	102	20.71	138	77	52	0	7	0	0
	GRAND JUNCTION	41	17	44	13	29	1	0.00	-0.14	0.00	0.11	28	13.19	156	85	44	0	7	0	0
	PUEBLO	46	20	54	16	33	3	0.01	-0.08	0.01	0.38	127	14.35	130	87	54	0	7	1	0
CT	BRIDGEPORT	45	27	51	20	36	3	0.00	-0.79	0.00	0.87	38	34.48	85	76	46	0	6	0	0
	HARTFORD	43	21	49	14	32	3	0.00	-0.86	0.00	0.35	14	37.01	86	84	48	0	7	0	0
DC	WASHINGTON	54	31	62	27	42	3	0.00	-0.71	0.00	0.40	20	32.47	86	79	37	0	5	0	0
DE	WILMINGTON	51	28	58	25	39	4	0.00	-0.80	0.00	0.66	30	-	-	81	37	0	6	0	0
FL	DAYTONA BEACH	64	44	71	41	54	-6	0.66	0.28	0.47	4.83	293	51.74	110	97	57	0	0	2	0
	JACKSONVILLE	62	39	69	36	50	-4	2.97	2.35	1.54	9.24	550	56.66	113	95	55	0	0	2	2
	KEY WEST	71	61	76	55	66	-5	0.76	0.31	0.65	4.01	302	38.83	100	81	59	0	0	2	1
	MIAMI	71	55	78	51	63	-8	0.67	0.26	0.66	4.06	338	69.21	125	89	56	0	0	2	1
	ORLANDO	66	46	75	42	56	-6	-	-	-	-	-	-	-	94	54	0	0	-	-
	TAMPA	65	49	74	45	57	-5	0.23	-0.27	0.22	9.11	655	61.24	142	96	57	0	0	2	0
	VALPARAISO/EGLIN	60	38	66	34	49	-3	0.00	-0.96	0.00	1.44	54	61.72	102	93	44	0	0	0	0
	WEST PALM BEACH	69	53	76	48	61	-6	1.80	1.27	1.80	4.37	257	60.56	101	92	59	0	0	1	1
GA	ATHENS	60	31	67	24	45	0	-	-	-	-	-	-	-	81	32	0	4	-	-
	ATLANTA	58	34	66	28	46	2	-	-	-	-	-	-	-	85	44	0	3	-	-
	AUGUSTA	63	31	70	26	47	0	-	-	-	-	-	-	-	86	37	0	5	-	-
	COLUMBUS	61	33	67	30	47	-1	-	-	-	-	-	-	-	96	45	0	3	-	-
	MACON	60	31	66	28	46	-3	-	-	-	-	-	-	-	95	41	0	6	-	-
	SAVANNAH	61	37	69	33	49	-2	-	-	-	-	-	-	-	94	47	0	0	-	-
HI	HILO	79	65	80	63	72	0	4.55	1.86	1.85	6.25	77	130.23	104	89	65	0	0	5	3
	HONOLULU	82	67	83	62	75	1	0.17	-0.70	0.15	0.32	13	19.94	97	86	54	0	0	3	0
	KAHULUI	83	65	87	60	74	1	0.08	-0.66	0.08	0.80	40	-	-	83	57	0	0	1	0
	LIHUE	77	67	78	62	72	-1	0.13	-1.02	0.09	0.73	22	-	-	86	71	0	0	3	0
ID	BOISE	42	28	46	20	35	5	0.14	-0.16	0.09	0.72	83	11.13	96	86	58	0	5	2	0
	LEWISTON	45	33	50	27	39	5	0.25	-0.03	0.10	0.56	71	15.51	129	81	55	0	3	4	0
	POCATELLO	35	20	43	4	28	4	0.04	-0.21	0.02	1.14	161	13.69	117	95	63	0	6	2	0
IL	CHICAGO/O'HARE	45	29	50	22	37	11	0.00	-0.56	0.00	0.87	51	31.10	89	84	58	0	7	0	0
	MOLINE	43	23	50	15	33	8	-	-	-	-	-	-	-	92	69	0	7	-	-
	PEORIA	45	27	53	20	36	10	-	-	-	-	-	-	-	90	62	0	7	-	-
	ROCKFORD	39	21	45	12	30	6	0.00	-0.48	0.00	0.63	45	28.85	75	93	70	0	7	0	0
	SPRINGFIELD	48	29	60	19	38	9	0.00	-0.63	0.00	0.55	30	28.94	84	89	59	0	5	0	0
IN	EVANSVILLE	50	25	59	20	37	2	0.00	-0.83	0.00	0.86	35	46.06	110	96	57	0	7	0	0
	FORT WAYNE	43	26	49	22	35	7	0.00	-0.66	0.00	0.57	29	39.76	118	94	65	0	7	0	0
	INDIANAPOLIS	48	27	56	20	38	7	0.00	-0.76	0.00	0.54	24	32.26	83	92	53	0	6	0	0
	SOUTH BEND	40	25	45	18	33	4	0.01	-0.75	0.01	1.02	46	32.35	85	93	74	0	7	1	0
IA	BURLINGTON	-	-	-	-	-	-	0.00	-0.44	0.00	0.67	50	31.67	89	-	-	-	-	0	0
	CEDAR RAPIDS	-	-	-	-	-	-	0.00	-0.36	0.00	0.70	63	25.60	77	-	-	-	-	0	0
	DES MOINES	42	25	47	18	33	10	-	-	-	-	-	-	-	92	63	0	7	-	-
	DUBUQUE	38	24	42	18	31	10	0.00	-0.44	0.00	0.66	49	29.46	78	90	68	0	7	0	0
	SIOUX CITY	47	23	56	15	35	14	0.00	-0.17	0.00	0.03	6	18.25	71	89	57	0	7	0	0
	WATERLOO	39	21	45	13	30	11	0.00	-0.29	0.00	0.39	43	31.31	94	90	66	0	7	0	0
KS	CONCORDIA	46	30	62	24	38	9	0.00	-0.19	0.00	0.82	144	24.91	87	84	61	0	5	0	0
	DODGE CITY	53	28	66	24	40	8	0.00	-0.14	0.00	0.37	84	27.54	130	84	40	0	7	0	0
	GOODLAND	46	26	54	22	36	7	0.00	-0.08	0.00	0.23	82	18.35	102	79	56	0	6	0	0
	TOPEKA	48	25	57	19	37	7	0.00	-0.32	0.00	1.17	121	29.33	84	93	57	0	7	0	0

Based on 1961-90 normals

Weather Data for the Week Ending December 20, 1997

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP. °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	WICHITA	52	29	57	25	40	8	0.01	-0.26	0.01	0.73	89	35.11	121	87	53	0	6	1	0
KY	JACKSON	51	30	59	21	41	3	0.00	-0.99	0.00	0.95	33	47.49	99	78	39	0	4	0	0
	LEXINGTON	50	27	57	18	38	3	0.00	-0.91	0.00	1.14	43	57.60	133	84	48	0	5	0	0
	LOUISVILLE	52	29	60	24	41	4	0.00	-0.82	0.00	0.93	38	54.56	126	88	42	0	5	0	0
	PADUCAH	53	25	63	19	39	2	0.00	-1.07	0.00	1.13	38	49.36	103	94	51	0	6	0	0
LA	BATON ROUGE	63	34	74	27	49	-4	0.20	-1.07	0.20	0.61	17	62.79	106	96	47	0	3	1	0
	LAKE CHARLES	64	38	74	31	51	-2	0.82	-0.34	0.81	2.15	66	62.14	117	96	54	0	2	2	1
	NEW ORLEANS	63	41	75	33	52	-2	0.05	-1.27	0.04	0.72	19	49.81	83	90	56	0	0	2	0
	SHREVEPORT	65	34	73	27	49	2	1.11	0.19	1.11	2.79	104	65.90	147	95	41	0	4	1	1
ME	CARIBOU	23	1	36	-14	12	-2	–	–	–	–	–	–	–	89	62	0	7	-	-
	PORTLAND	40	17	49	7	28	3	0.00	-1.02	0.00	0.37	12	35.21	82	88	41	0	7	0	0
MD	BALTIMORE	55	27	62	21	41	5	0.00	-0.77	0.00	0.43	19	36.72	93	83	36	0	7	0	0
MA	BOSTON	44	27	53	19	36	3	0.00	-0.91	0.00	0.49	19	30.25	75	75	46	0	5	0	0
	WORCESTER	41	23	50	11	32	5	–	–	–	–	–	–	–	77	39	0	7	-	-
MI	ALPENA	43	28	59	24	36	12	0.00	-0.48	0.00	0.34	25	28.70	102	81	48	0	8	0	0
	GRAND RAPIDS	43	28	46	22	35	9	0.01	-0.64	0.01	0.56	29	29.19	83	96	62	0	7	1	0
	HOUGHTON LAKE	40	27	48	18	33	11	0.00	-0.44	0.00	0.18	14	25.93	94	88	57	0	7	0	0
	LANSING	42	24	45	14	33	7	0.02	-0.51	0.02	0.47	30	26.29	88	92	64	0	7	1	0
	MARQUETTE	–	–	51	–	–	–	0.00	-0.66	0.00	1.77	102	32.27	94	–	–	-	-	0	0
	MUSKEGON	42	29	45	21	35	7	0.02	-0.67	0.02	0.56	28	25.77	82	94	68	0	5	1	0
MN	DULUTH	38	22	46	12	30	18	–	–	–	–	–	–	–	85	56	0	7	-	-
	INT'L FALLS	36	18	44	10	27	21	0.01	-0.18	0.01	0.10	18	18.81	78	86	58	0	7	1	0
	MINNEAPOLIS	43	23	47	17	33	15	0.00	-0.24	0.00	0.12	16	34.28	123	89	52	0	7	0	0
	ROCHESTER	38	23	40	17	30	13	–	–	–	–	–	–	–	87	66	0	7	-	-
	ST. CLOUD	37	19	44	9	28	15	0.00	-0.19	0.00	0.07	12	24.43	90	93	63	0	7	0	0
MS	JACKSON	59	31	70	20	45	-2	0.36	-0.99	0.36	1.11	29	54.01	101	95	46	0	5	1	0
	MERIDIAN	60	30	71	24	45	-3	0.21	-1.20	0.21	0.82	21	51.34	94	96	48	0	6	1	0
	TUPELO	59	29	68	25	44	1	0.00	-1.42	0.00	1.04	28	61.16	114	89	42	0	6	0	0
MO	COLUMBIA	50	29	60	20	39	8	0.00	-0.56	0.00	0.81	48	36.17	94	85	54	0	5	0	0
	KANSAS CITY	49	30	57	22	40	10	–	–	–	–	–	–	–	81	56	0	4	-	-
	SAINT LOUIS	53	29	62	22	41	8	0.00	-0.69	0.00	0.64	31	30.09	82	86	49	0	5	0	0
	SPRINGFIELD	55	29	68	22	42	7	0.00	-0.72	0.00	1.64	75	36.98	88	84	44	0	5	0	0
MT	BILLINGS	42	28	50	14	35	9	0.03	-0.14	0.02	0.42	87	15.42	104	69	49	0	5	2	0
	BUTTE	33	10	43	-8	22	5	–	–	–	–	–	–	–	82	53	0	7	-	-
	GLASGOW	41	19	52	10	30	16	0.00	-0.08	0.00	0.00	0	11.71	109	78	44	0	7	0	0
	GREAT FALLS	43	28	56	11	36	12	0.03	-0.16	0.03	0.30	57	14.24	96	84	40	0	4	1	0
	KALISPELL	36	23	44	18	30	8	0.17	-0.22	0.06	0.27	25	17.25	109	95	65	0	7	4	0
	MILES CITY	47	22	55	13	35	16	0.00	-0.14	0.00	0.02	5	10.46	76	80	39	0	7	0	0
	MISSOULA	37	23	44	9	30	7	0.10	-0.17	0.05	0.33	46	14.74	113	85	62	0	6	3	0
NE	GRAND ISLAND	50	27	56	21	38	14	0.00	-0.16	0.00	0.03	6	26.73	116	84	49	0	7	0	0
	LINCOLN	47	24	53	19	36	11	–	–	–	–	–	–	–	91	60	0	7	-	-
	NORFOLK	49	25	58	16	37	15	0.00	-0.17	0.00	0.08	16	19.88	80	83	48	0	7	0	0
	NORTH PLATTE	50	18	56	14	34	10	0.00	-0.11	0.00	0.08	25	17.49	91	89	40	0	7	0	0
	OMAHA	46	25	52	20	36	11	0.00	-0.22	0.00	0.38	55	30.30	103	93	66	0	7	0	0
	SCOTTSBLUFF	49	20	59	13	35	9	0.00	-0.14	0.00	0.12	31	20.14	134	76	40	0	7	0	0
	VALENTINE	50	22	61	13	36	14	0.00	-0.08	0.00	0.04	15	22.07	122	84	40	0	7	0	0
NV	ELY	39	10	45	-4	24	-1	–	–	–	–	–	–	–	76	44	0	7	-	-
	LAS VEGAS	65	37	81	33	46	1	0.00	-0.08	0.00	0.10	42	3.82	96	43	20	0	0	0	0
	RENO	48	23	53	17	35	3	0.05	-0.17	0.03	0.61	97	7.78	109	85	34	0	7	2	0
	WINNEMUCCA	43	21	50	7	32	3	–	–	–	–	–	–	–	86	48	0	7	-	-
NH	CONCORD	41	15	50	7	28	4	0.01	-0.70	0.01	0.25	12	32.27	91	77	40	0	7	1	0
NJ	NEWARK	50	31	56	24	40	5	0.00	-0.77	0.00	0.84	37	39.00	91	87	38	0	4	0	0
NM	ALBUQUERQUE	49	26	54	23	37	3	0.30	0.19	0.30	0.79	255	12.21	141	74	30	0	7	1	0
NY	ALBANY	41	21	47	12	31	5	0.00	-0.66	0.00	0.21	11	32.70	93	81	52	0	7	0	0
	BINGHAMTON	38	24	46	12	31	5	0.12	-0.56	0.10	1.04	52	29.70	83	85	56	0	6	2	0
	BUFFALO	41	29	47	16	34	6	0.10	-0.73	0.10	1.42	58	39.61	106	84	51	0	5	1	0
	ROCHESTER	41	25	51	13	33	5	0.13	-0.49	0.11	1.25	68	33.21	107	83	48	0	6	2	0
	SYRACUSE	42	23	52	10	32	5	0.11	-0.61	0.10	1.24	57	29.70	78	88	50	0	6	2	0
NC	ASHEVILLE	54	22	62	18	38	-1	–	–	–	–	–	–	–	90	35	0	7	-	-
	CHARLOTTE	59	32	66	29	45	3	0.00	-0.79	0.00	1.02	46	45.68	109	71	25	0	4	0	0
	GREENSBORO	55	27	64	21	41	1	0.00	-0.77	0.00	0.55	25	37.83	91	72	29	0	6	0	0
	HATTERAS	60	41	53	32	46	-3	0.00	-1.02	0.00	0.77	27	49.90	92	85	64	0	1	0	0
	RALEIGH	56	27	66	23	41	-1	0.00	-0.74	0.00	0.72	35	38.79	98	85	33	0	7	0	0
	WILMINGTON	60	37	68	32	49	1	–	–	–	–	–	–	–	90	36	0	1	-	-
ND	BISMARCK	46	20	57	9	33	20	0.00	-0.11	0.00	0.08	28	14.89	97	83	47	0	7	0	0
	DICKINSON	48	24	61	13	36	19	0.00	-0.08	0.00	0.02	8	16.05	101	71	36	0	6	0	0
	FARGO	35	20	39	9	27	17	–	–	–	–	–	–	–	87	72	0	7	-	-
	GRAND FORKS	37	21	43	12	29	19	–	–	–	–	–	–	–	89	67	0	7	-	-
	JAMESTOWN	38	23	43	11	31	19	0.00	-0.11	0.00	0.23	74	20.60	123	81	63	0	7	0	0
	WILLISTON	40	20	50	13	30	17	0.00	-0.14	0.00	0.00	0	11.75	87	79	52	0	7	0	0
OH	AKRON-CANTON	42	26	51	20	34	4	0.00	-0.67	0.00	1.41	71	31.81	89	88	58	0	6	0	0
	CINCINNATI	51	27	62	20	39	6	0.00	-0.71	0.00	1.07	51	38.43	95	84	47	0	5	0	0
	CLEVELAND	44	28	51	22	36	5	0.00	-0.70	0.00	1.34	64	34.27	96	85	54	0	5	0	0
	COLUMBUS	48	28	56	21	38	5	0.00	-0.65	0.00	1.11	58	36.70	99	92	64	0	5	0	0
	DAYTON	45	27	55	19	36	5	0.00	-0.67	0.00	1.00	51	30.09	84	87	55	0	5	0	0
	MANSFIELD	42	27	51	22	35	6	–	–	–	–	–	–	–	87	57	0	6	-	-

Based on 1961-90 normals

Weather Data for the Week Ending December 20, 1997

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Dec 1	PCT. NORMAL SINCE Dec 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.50 INCH OR MORE
	TOLEDO	41	27	49	22	34	7	0.00	-0.67	0.00	1.00	50	37.81	118	92	64	0	7	0	0
	YOUNGSTOWN	42	27	50	20	35	6	0.01	-0.66	0.01	1.40	71	32.37	89	79	53	0	6	1	0
OK	OKLAHOMA CITY	58	31	67	26	45	6	0.14	-0.17	0.14	0.49	51	25.50	78	82	36	0	4	1	0
	TULSA	58	32	69	25	45	7	0.03	-0.45	0.03	1.13	75	38.35	96	79	40	0	3	1	0
OR	ASTORIA	51	39	56	32	45	3	–	–	–	–	–	–	–	96	78	0	1	-	-
	BURNS	35	19	40	8	27	2	0.40	0.15	0.37	0.86	108	9.86	103	94	66	0	7	3	0
	EUGENE	48	34	53	30	41	0	1.14	-0.80	0.65	2.16	39	38.59	83	89	74	0	4	4	1
	MEDFORD	45	33	56	27	39	2	–	–	–	–	–	–	–	96	69	0	4	-	-
	PENDLETON	46	33	57	26	40	6	–	–	–	–	–	–	–	88	55	0	3	-	-
	PORTLAND	47	37	54	33	42	2	–	–	–	–	–	–	–	96	77	0	0	-	-
	SALEM	46	36	54	29	41	2	–	–	–	–	–	–	–	92	65	0	2	-	-
PA	ALLENTOWN	47	24	55	20	35	4	0.00	-0.78	0.00	0.61	22	36.66	87	81	47	0	7	0	0
	ERIE	41	30	47	26	36	5	–	–	–	–	–	–	–	87	54	0	4	-	-
	MIDDLETOWN	51	26	57	21	38	5	0.00	-0.73	0.00	0.38	18	30.69	78	83	39	0	7	0	0
	PHILADELPHIA	50	30	58	24	40	5	0.00	-0.77	0.00	0.69	31	30.09	75	73	39	0	5	0	0
	PITTSBURGH	44	27	52	20	36	5	0.00	-0.66	0.00	0.62	33	33.86	95	90	45	0	5	0	0
	SCRANTON	41	23	48	13	32	3	0.05	-0.51	0.05	0.90	53	26.40	75	81	56	0	7	1	0
	WILLIAMSPORT	44	22	51	17	33	3	0.01	-0.67	0.01	0.46	22	28.61	72	91	52	0	7	1	0
RI	PROVIDENCE	47	24	55	17	36	3	0.00	-0.99	0.00	0.73	25	37.99	86	85	43	0	7	0	0
SC	BEAUFORT	61	38	67	35	49	-2	–	–	–	–	–	–	–	89	47	0	0	-	-
	CHARLESTON	61	37	69	33	49	-2	–	–	–	–	–	–	–	84	42	0	0	-	-
	COLUMBIA	61	32	69	26	47	0	–	–	–	–	–	–	–	80	33	0	4	-	-
	GREENVILLE	58	31	65	25	45	2	–	–	–	–	–	–	–	84	25	0	4	-	-
SD	ABERDEEN	40	19	44	8	30	15	0.00	-0.08	0.00	0.19	70	19.38	105	89	64	0	7	0	0
	HURON	46	22	55	12	34	16	0.00	-0.11	0.00	0.13	42	24.62	124	84	48	0	7	0	0
	RAPID CITY	51	22	68	8	37	13	–	–	–	–	–	–	–	88	35	0	7	-	-
	SIOUX FALLS	44	22	52	11	33	15	0.00	-0.16	0.00	0.16	33	20.16	85	86	56	0	7	0	0
TN	BRISTOL	50	19	57	14	35	-3	0.00	-0.77	0.00	1.04	48	40.43	102	93	43	0	7	0	0
	CHATTANOOGA	57	25	66	21	41	1	0.00	-1.19	0.00	1.04	31	54.04	105	94	43	0	7	0	0
	KNOXVILLE	53	26	63	22	40	0	0.00	-1.05	0.00	0.95	33	50.58	111	92	46	0	7	0	0
	MEMPHIS	58	35	66	25	46	3	0.00	-1.32	0.00	1.12	29	67.72	135	85	44	0	3	0	0
	NASHVILLE	56	27	64	22	42	2	0.00	-1.06	0.00	0.87	29	52.83	115	88	39	0	6	0	0
TX	ABILENE	66	33	75	25	50	4	1.53	1.31	1.53	2.39	351	26.31	109	84	33	0	4	1	1
	AMARILLO	57	27	70	23	42	5	0.47	0.39	0.47	0.93	332	23.76	123	70	30	0	7	1	0
	AUSTIN	69	40	74	32	54	3	3.36	2.94	2.96	3.58	286	46.38	148	91	44	0	1	2	1
	BEAUMONT	66	41	74	31	53	-1	0.71	-0.36	0.69	2.54	83	48.35	87	99	56	0	1	2	1
	BROWNSVILLE	74	46	77	35	60	-2	0.02	-0.26	0.01	0.26	33	36.00	138	92	53	0	0	2	0
	CORPUS CHRISTI	73	43	79	29	58	0	0.09	-0.19	0.08	0.17	22	36.14	122	87	43	0	1	2	0
	DEL RIO	72	36	76	27	54	2	0.29	0.15	0.29	0.35	86	22.90	127	73	26	0	1	1	0
	EL PASO	58	26	64	22	42	-2	0.21	0.07	0.21	0.70	184	8.94	102	72	25	0	6	1	0
	FORT WORTH	66	37	72	29	52	5	3.27	2.86	3.27	5.56	460	43.59	132	89	39	0	1	1	1
	GALVESTON	63	49	70	36	56	0	–	–	–	–	–	–	–	96	66	0	0	-	-
	HOUSTON	67	38	74	29	52	-1	2.03	1.26	2.02	4.89	216	59.20	132	97	52	0	2	2	1
	LUBBOCK	63	28	72	22	44	4	1.01	0.90	1.01	1.25	347	22.17	120	67	23	0	7	1	1
	MIDLAND	66	29	72	25	47	3	–	–	–	–	–	–	–	86	24	0	6	-	-
	SAN ANGELO	67	31	74	22	49	3	0.60	0.43	0.60	0.77	148	22.76	113	89	29	0	4	1	1
	SAN ANTONIO	71	36	76	26	53	2	2.53	2.21	2.52	2.86	279	33.25	109	81	34	0	2	2	1
	VICTORIA	69	39	76	27	54	-1	0.51	0.06	0.39	0.76	58	66.22	180	94	48	0	2	2	0
	WACO	67	35	72	27	51	4	7.99	7.57	7.98	9.33	752	42.89	137	88	38	0	3	2	1
	WICHITA FALLS	62	32	70	28	47	5	1.22	0.92	–	2.24	267	21.91	77	77	33	0	4	-	-
UT	SALT LAKE CITY	37	20	44	12	29	-1	0.00	-0.33	0.00	0.55	59	16.63	107	90	66	0	7	0	0
VT	BURLINGTON	38	18	44	2	28	6	0.04	-0.50	0.04	0.39	24	29.32	87	76	52	0	5	1	0
VA	LYNCHBURG	55	25	64	17	40	2	0.00	-0.74	0.00	0.95	45	33.78	85	81	29	0	6	0	0
	NORFOLK	52	33	63	29	43	-1	0.00	-0.73	0.00	0.82	31	35.38	82	92	54	0	4	0	0
	RICHMOND	55	27	63	20	41	1	0.00	-0.74	0.00	0.85	31	32.43	77	82	34	0	7	0	0
	ROANOKE	55	29	61	20	42	4	0.00	-0.67	0.00	0.40	21	33.63	84	89	31	0	5	0	0
	WASH/DULLES	54	24	62	19	39	4	0.00	-0.73	0.00	0.58	27	34.41	88	89	38	0	7	0	0
WA	HANFORD	44	28	59	21	36	–	0.02	-0.26	–	0.31	44	6.39	108	89	62	0	5	-	-
	OLYMPIA	47	36	52	32	41	4	4.82	3.00	2.75	5.25	100	65.10	136	98	82	0	1	5	3
	QUILLAYUTE	49	38	55	34	43	3	7.71	4.21	1.77	8.59	96	124.92	125	97	67	0	0	7	6
	SEATTLE-TACOMA	47	36	56	35	43	3	–	–	–	–	–	–	–	92	73	0	0	-	-
	SPOKANE	38	28	42	23	33	6	–	–	–	–	–	–	–	97	75	0	5	-	-
	YAKIMA	40	23	50	16	32	2	0.01	-0.32	0.01	0.19	21	6.88	92	93	67	0	7	1	0
WV	BECKLEY	48	24	55	14	36	2	0.00	-0.74	0.00	0.66	31	38.24	91	79	35	0	6	0	0
	CHARLESTON	50	24	57	19	37	0	0.00	-0.76	0.00	0.80	27	39.79	96	91	44	0	7	0	0
	ELKINS	48	16	56	12	32	0	0.00	-0.80	0.00	1.01	44	40.59	93	94	36	0	7	0	0
	HUNTINGTON	50	26	58	18	38	2	0.00	-0.76	0.00	0.44	20	36.84	91	86	40	0	5	0	0
WI	EAU CLAIRE	43	23	49	14	33	17	0.00	-0.25	0.00	0.16	22	29.44	94	89	51	0	7	0	0
	GREEN BAY	40	25	44	17	32	13	–	–	–	–	–	–	–	84	63	0	6	-	-
	MADISON	41	23	45	15	32	11	–	–	–	–	–	–	–	89	61	0	7	-	-
	MILWAUKEE	42	29	48	24	36	12	–	–	–	–	–	–	–	83	59	0	5	-	-
WY	CASPER	38	22	43	8	29	5	0.10	-0.04	0.09	0.51	116	11.78	98	74	56	0	6	2	0
	CHEYENNE	45	26	56	18	36	8	–	–	–	–	–	–	–	66	37	0	5	-	-
	LANDER	28	8	39	-2	18	-2	–	–	–	–	–	–	–	84	67	0	7	-	-
	SHERIDAN	36	16	44	0	26	4	0.15	-0.02	0.13	0.55	117	15.30	107	86	68	0	7	2	0

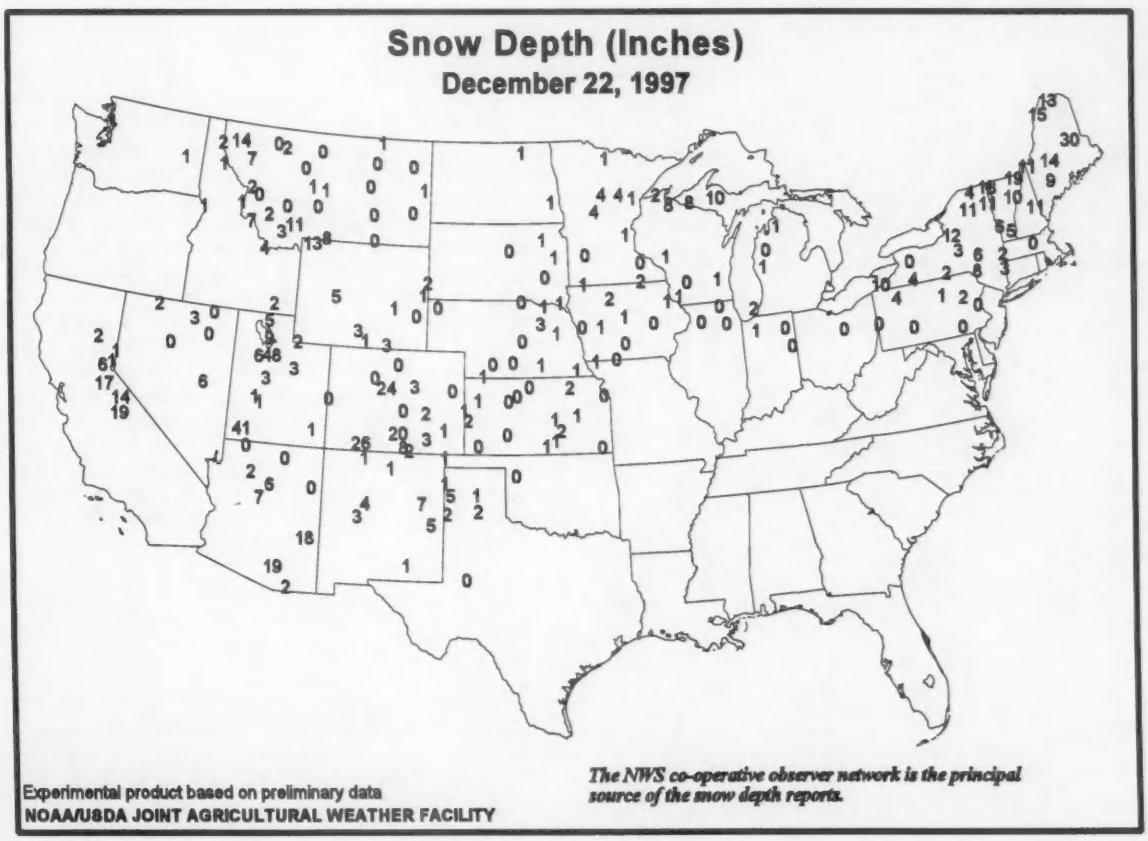
NOTICE: Due to computer problems at the Climate Prediction Center (CPC), precipitation totals from several dozen locations are not accurate. As a result, we have blanked out the values for these locations in the U.S. city table. CPC will try to have the problem solved in time for next week's publication.

National Agricultural Summary

December 15 - 21, 1997

HIGHLIGHTS

Dry, warm weather dominated the United States, benefiting livestock and allowing farmers to complete most field crop harvests where crops remained standing. Temperatures were well above normal in the central and northern Plains, promoting growth and development of winter wheat fields. Late-week storms boosted soil moisture supplies in winter wheat fields in the southern Plains. However, dry soils continued in the northern High Plains. Fieldwork along the Pacific Coast was limited by showers and wet soils. Early-week rain interrupted vegetable harvests in Florida, but activity resumed at midweek. Citrus groves, where processors were harvesting at full speed, experienced mild days and cool nights.


Snow Depth (Inches)
December 22, 1997
Experimental product based on preliminary data
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
The NWS co-operative observer network is the principal source of the snow depth reports.

International Weather and Crop Summary

December 14 - 20, 1997

HIGHLIGHTS

FSU-WESTERN: A cold wave pushed southward over winter grain areas, creating the potential for some crop damage in areas that lacked a protective snow cover.

EUROPE: Bitter cold threatened crops in the east while heavy rains returned to crop areas in Portugal and Spain.

EASTERN ASIA: Despite milder weather, winter wheat remained dormant across the North China Plain.

AUSTRALIA: Showers continued across primary summer crop areas, but warmer weather increased crop moisture demands.

SOUTH ASIA: Long-awaited dryness brought some relief to mature cotton.

SOUTH AFRICA: Unseasonable dryness continued across the corn belt.

SOUTHEAST ASIA: Seasonable showers brought drought relief for main-season rice in Java. Drought continued across the northern Philippines.

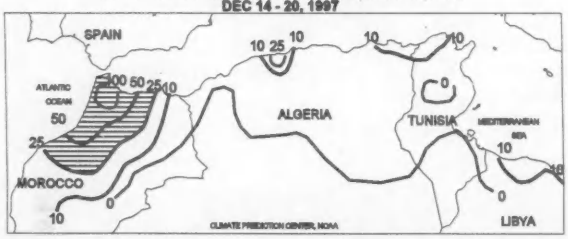
SOUTH AMERICA: Early-week rain slowed winter wheat harvesting in Argentina, but the weather improved for fieldwork later in the week.

NORTHWESTERN AFRICA: Generally dry weather favored fieldwork in Algeria and Tunisia, while significant rain in Morocco improved moisture conditions for winter grain development.

EUROPE

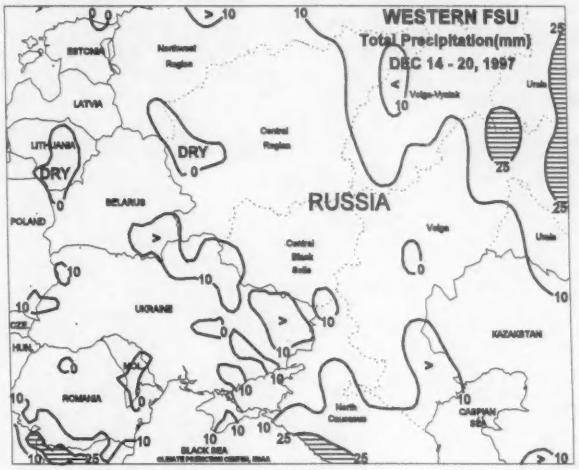
Bitterly cold weather from the former Soviet Union pushed westward into Europe, threatening winter grains. Extreme minimum temperatures ranged from -15 to -19 degrees C in most of Poland, southern and eastern Romania, and Bulgaria. Temperatures below -19 degrees C were restricted to extreme eastern Poland and a small area in southeastern Romania and northern Bulgaria. While temperatures in these areas approached the threshold for potential winterkill, extreme cold was of short duration and was preceded by snow, minimizing the threat for widespread damage. Elsewhere, extreme minimum temperatures in eastern Germany, the Czech Republic, Slovakia, Hungary, western Romania, and Yugoslavia ranged from -6 to -15 degrees C, remaining above the threshold for potential damage. Temperatures in most citrus areas in Greece and Italy remained above freezing. Weekly temperatures in eastern Europe ranged from 4 to 9 degrees C below normal. In western Europe, light to moderate rain (10-32 mm) continued to favor winter grains in England and northern France. Heavy rain (50 to more than 100 mm) returned to Portugal and southern Spain, likely causing additional flooding. The heavy rain also spread eastward into winter wheat areas in Italy's Po Valley.

NORTHWEST AFRICA Total Precipitation (mm)
DEC 14 - 20, 1997



NORTHWESTERN AFRICA

Generally dry weather (precipitation amounts less than 8 mm)prevailed over winter grain areas in Algeria and Tunisia, allowing late-season planting to progress at a rapid pace. Soil moisture in these areas remained adequate for crop emergence and establishment. In Morocco, significant rain (10 to more than 50 mm) improved moisture conditions for winter grain development. Weekly temperatures averaged 1 to 3 degrees C above normal over Morocco, Algeria, and Tunisia, promoting rapid emergence and early plant growth.



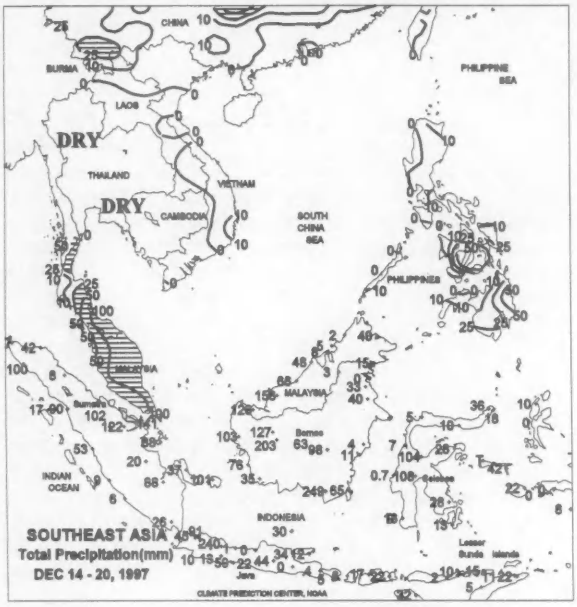
FSU-WESTERN

Bitterly cold weather continued to push southward over the region, reaching as far south as the Black Sea coast. This past week's cold wave brought temperatures that were highly unusual for this early in the winter. Weekly temperatures averaged 5 to 12 degrees C below normal in Russia, Ukraine, Belarus, Lithuania, Latvia, and Moldova. Extreme minimum temperatures of -20 degrees C were observed as far south as the Black Sea coast. Minimum temperatures fell below -30 degrees C in northeastern Ukraine and as far south as the northern tip of the North Caucasus region in Russia. An adequate snow cover in northern Russia, Belarus, and the Baltics protected winter grains from potential winterkill. Some damage to winter wheat likely occurred in a band that stretched from the central Ukraine eastward through the North Caucasus region in Russia. These areas had minimal snow cover and the extreme cold (minimum temperatures at or below -20 degrees C) lasted for 3 days. By week's end, temperatures moderated over most of the region, improving overwintering conditions.

Frigid Weather in Ukraine and Russia

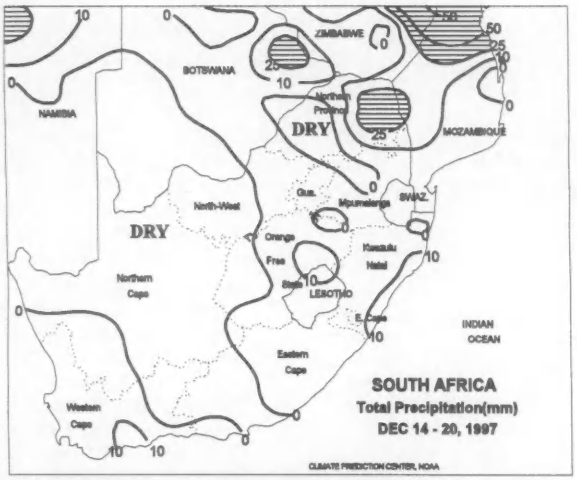
Frigid Siberian Arctic air brought a severe chill to winter grain areas of Ukraine, Russia, the Baltics, and Belarus during the period December 15th through 18th. Temperatures as low as -33 C were observed in eastern Ukraine and central Russia near Moscow, with minimum temperatures generally ranging from -17 to -30 C through the period. An adequate layer of snow cover protected winter grains from the Baltics eastward through most of northern Russia as well as the northern half of Ukraine. Snow cover in key winter wheat producing areas in the southern half of Ukraine and southern Russia (southern and central North Caucasus region, and lower Volga Valley) was thin or patchy, leaving crops vulnerable to potential damage. Temperatures moderated quickly beginning on the 19th, improving overwintering conditions. While winter grains have likely sustained some damage in these vulnerable areas, the full extent of the damage will not be apparent until crops begin breaking dormancy in the spring. The bitterly cold weather also spilled into eastern Europe, threatening winter grains there as well. However, extreme cold was of short duration and was preceded by snow, minimizing the threat for widespread damage.

– D. Secora and T. Puterbaugh



SOUTHEAST ASIA

Seasonable showers (25-50 mm, most locations) continued across Java and southern Sumatra, increasing moisture supplies for main-season rice planting. In the Philippines, drought continued across Luzon, where rainfall was less than 25 mm. Typically during mid-December, rainfall averages from 50 to 100 mm across northern and eastern Luzon. Showers (40-165 mm) benefited oil palm across peninsular Malaysia and Thailand.



SOUTH AFRICA

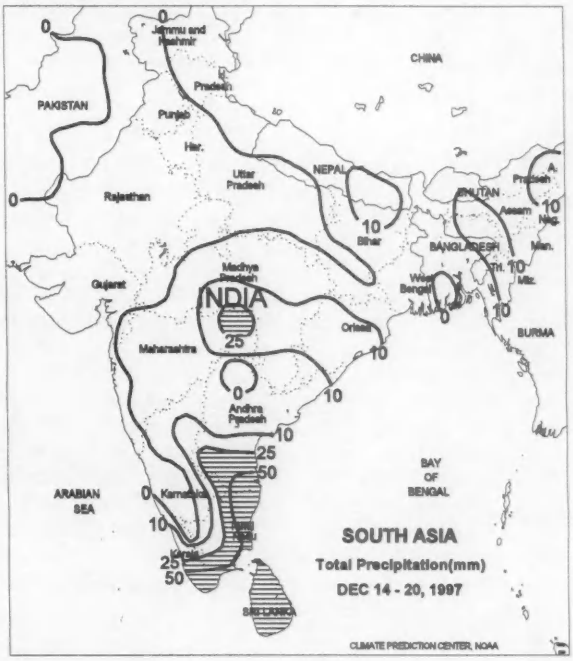
Dry, locally hot weather gripped the region, raising additional concerns for this season's corn crop. Much of the crop already in the ground has now experienced some degree of stress, and portions of the western corn belt have not been planted due to dryness. Corn planted past the optimal period (late-December) typically suffers below-normal yields due to the higher potential for summer heat stress and, in extreme cases, damage from an early autumn freeze (mid- to late-April). Conditions remained generally favorable for vegetative corn in eastern crop areas centered about Mpumalanga, due primarily to recent beneficial rains and lack of excessive heat. The drying trend reached coastal sugarcane areas of Kwazulu-Natal, with rainfall totaling 10 mm or less in primary crop areas.

SOUTH AMERICA

In Argentina, early-week scattered heavy rain (41-112 mm) slowed winter wheat harvesting in eastern and central Buenos Aires, but drier weather favored fieldwork later in the week. Temperatures averaged 2 to 3 degrees C below normal across central Argentina. According to reports as of December 12, soybean planting in Argentina was 74 percent complete, corn 87 percent, and sunflower 94 percent done. Wheat harvesting progressed to 28 percent done, behind last year's pace of 38 percent. In southern Brazil, widespread showers (10-25 mm or more) boosted topsoil moisture in Rio Grande do Sul and maintained favorable moisture elsewhere. According to reports as of December 11, 93 percent of the Brazilian soybean crop has been planted, compared to the 92 percent 5-year average.

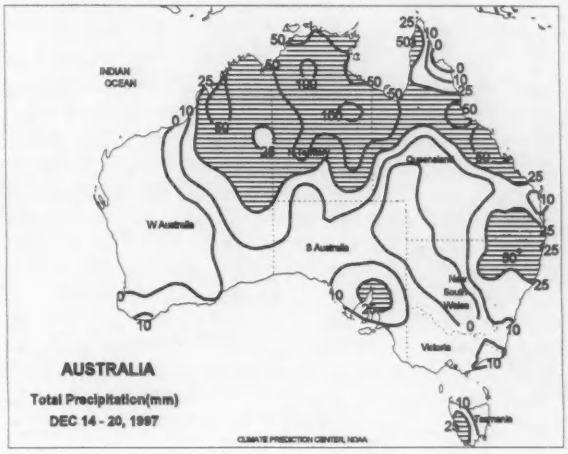
SOUTH ASIA

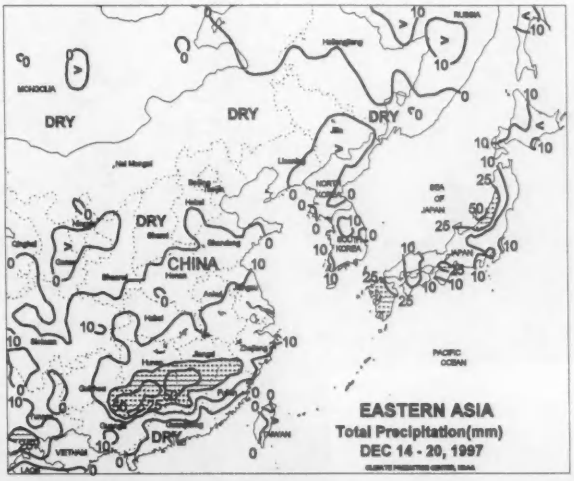
Seasonable dryness dominated the region, ending a protracted wet spell that had plagued maturing summer crops since October. The sunnier skies were especially welcomed in the primary cotton areas of northern and central India, where quality and yield potential have reportedly suffered in recent weeks. However, unusual coolness (temperature 1-5 degrees C below normal, highs barely reaching 20 degrees C from Madhya Pradesh northward) slowed summer crop drying as well as winter grain and oilseed development. In southern India, wet weather lingered in primary rice areas along the southeast coast. However, amounts and coverage were greatly diminished, with accumulations generally ranging from 35 to 60 mm. In the east, scattered light showers had no impact on rice planting and harvesting, which typically last through the end of January.



AUSTRALIA

Moderate showers (10-25 mm or more) continued over important sorghum and cotton areas of southern Queensland and northern New South Wales. However, the area receiving beneficial rain was somewhat smaller than that of last week, and above-normal temperatures (1-3 degrees C above normal, highs in the upper 30's C) raised crop moisture requirements. Shower activity picked up along Queensland's coast as sugarcane harvests neared completion, but only a few locations reported rainfall in excess of 50 mm. Northern Australia's summer monsoon region has entered its wettest time of the year, which traditionally results in abundant moisture for the new sugarcane crop. Farther south, generally favorable conditions prevailed for winter wheat harvests in Victoria and southern New South Wales, but untimely showers (10-25 mm or more) persisted over sections of South Australia. Dryness and seasonable warmth in Western Australia favored winter wheat and barley harvests. In New Zealand, mostly dry weather continued in the main grazing and pasture areas.





EASTERN ASIA

Milder weather (temperatures averaged 2-5 degrees C above normal) prevailed across the North China Plain, but winter wheat remained dormant. Rainfall was very light (less than 5 mm) across Shandong and Hebei. Heavier rain (10-25 mm or more, exceeding 50 mm at higher elevations in the south) extended from southern Anhui and Jiangsu into the lower Yangtze Valley, maintaining moisture supplies for winter grains and oilseeds.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center
Managing Editor ..... ***Douglas Le Comte*** (202) 720-7919
fax (202) 720-1455
Editor ..... ***Brad Rippey*** (202) 720-1444
Meteorologists .... ***David Secora, Jeff Savadel, Brian Morris***
Special Requests ..... (202) 720-7917
Subscriptions ..... ***John Kopman*** (301) 763-8227, ext. 7534
fax (301) 763-8395

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(Continued from front cover)

Early in the week, record warmth arrived on the **northern Plains**, while cold weather continued across the **Gulf Coast States**. Subfreezing temperatures were recorded as far south as **southern Texas** and **northern Florida**. On Sunday, heavy snow fell in parts of **Mississippi** (up to 8 inches in central sections) and **Alabama** (more than 4 inches in some west-central counties). In **Jackson, MS**, the 4.8-inch accumulation was their greatest since 5.5 inches fell on January 13, 1982, and the most in December since 7.5 inches fell on December 22, 1929. Farther east, heavy rain continued to plague **central and northeastern Florida** through Monday. In **Jacksonville, FL**, 1.54 inches fell on December 15, boosting their month-to-date total to a December-record 9.21 inches. Meanwhile in **Tampa**, the **Hillsborough River** crested at a record level at the Morris Bridge gage on Monday, surpassing the September 1988 standard by 0.16 feet.

Until cooler air arrived at week's end, more than two dozen daily-record highs were set or tied in the **Great Lakes region**, **upper Midwest**, and **northern Plains**. On Sunday, highs topped the 60-degree mark as far north as **Dickinson, ND** (61°F), while **Rapid City, SD** notched 68°F. Daily records were set or tied on 4 consecutive days in **International Falls, MN** (41, 44, 38, and 37°F) from December 14-17. In **Michigan**, highs on Monday soared to 59°F in **Alpena** and 51°F in **Marquette**, toppling their respective daily records by 13 and 14°. In contrast, Arctic air briefly settled into **northern New England**, lowering temperatures to -15°F on Monday in **Canaan, VT** and -14°F a day later in **Caribou, ME**.

Stormy weather briefly returned to the **Pacific Northwest**, but after midweek, the first in a new series of systems reached **southern California** after a 10-day respite. Before the pattern change, **Eureka, CA** posted a daily-record rainfall of 1.80 inches on Sunday. On December 17-18, 24-hour totals across **southern California** reached 1.76 inches in **Torrance** and 1.37 inches in **Thousand Oaks**. Heavy rain erupted across **central Texas** on Saturday, measuring 7.98 inches in **Waco**. Waco's total shattered their all-time 24-hour record of 7.18 inches, set on May 11-12, 1953. Other **Texas** totals for December 20 included 2.52 inches in **San Antonio** and 2.76 inches in **Austin**. Meanwhile in **Montana**, **Glasgow's** dry spell reached 28 days (November 23 to December 20), their longest since a 31-day such streak in December 1991 - January 1992.

Very cold air moved into **Alaska** during the week, as weekly temperatures averaged as much as 17°F below normal. **Bettles** recorded a low of -46°F on Tuesday, and **Kodiak** logged three consecutive daily-record lows (0, 2, and -2°F) from December 15-17.

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